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ABSTRACT

An evaluation was done of New York City Board of Education's Project Language Development through Holistic Learning--Mathematics, Art, Science, Technology, and Education Resources (Project MASTER). The project offered instruction to 344 low-income, Spanish-speaking students of limited English proficiency in grades 3 to 5 at 5 elementary schools in the Bronx. Students received instruction in mathematics, science, arts, and (at some sites) computer skills. Instruction was integrated with English language learning through the medium of science projects. Project personnel anticipated that the hands-on approach used in the science projects would encourage critical thinking. The evaluation found that the project was fully implemented. Students developed skills in English as a Second Language (ESL), science, arts, mathematics, and the use of computers. Scores in ESL, science, and mathematics all increased significantly. The program included staff development, curriculum development, and some parental involvement activities. In addition, the project met its objectives in ESL, mathematics, science, and staff development. As the project did not provide data on parent involvement, that objective could not be assessed. (Author/JB)

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OREA Report

LANGUAGE DEVELOPMENT THROUGH HOLISTIC LEARNING--MATHEMATICS, ART, SCIENCE, TECHNOLOGY, AND EDUCATION RESOURCES (PROJECT MASTER)

Grant Number: G008525043

1989-90

FINAL EVALUATION REPORT

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LANGUAGE DEVELOPMENT THROUGH HOLISTIC LEARNING-- MATHEMATICS, ART, SCIENCE, TECHNOLOGY, AND EDUCATION RESOURCES (PROJECT MASTER) 1989-90

SUMMARY

- Project MASTER was fully implemented. Students developed skills in English as a Second Language (E.S.L.), science, arts, and mathematics, and in the use of computers where offered. The program included staff development, curriculum development, and some parental involvement activities.

- The project met its objectives in E.S.L., mathematics, science, and staff development. It did not provide data to assess its parental involvement objective.

Language Development Through Holistic Learning-- Mathematics, Art, Science, Technology, and Education Resources (Project MASTER) completed the fifth and final year of Elementary and Secondary Education Act (E.S.E.A.) Title VII funding. The project offered instruction to 344 Spanish-speaking students of limited English proficiency (LEP) in grades three to five at five elementary schools in the Bronx. Students received instruction in mathematics, science, arts, and (at some sites) computer skills. Instruction was integrated with English language learning through the medium of science projects. Project personnel anticipated that the hands-on approach used in the science projects would encourage critical thinking.

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This report has been prepared by the Bilingual, Multicultural, and Early Childhood Evaluation Unit of the Office of Research, Evaluation, and Assessment. Thanks are due to Marbella Barrera for collecting the data and writing the report.

Additional copies of this report are available from:

Dr. Tomi Deutsch Berney
Office of Research, Evaluation, and Assessment
New York City Public Schools
110 Livingston Street, Room 732
Brooklyn, NY 11201
(718) 935-3790

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I. INTRODUCTION

This report documents the Office of Research, Evaluation, and Assessment's (OREA's) evaluation of Language Development Through Holistic Learning--Mathematics, Art, Science, Technology, and Education Resources (Project MASTER), a program funded under Title VII of the Elementary and Secondary Education Act (E.S.E.A.). This program aimed to develop the English language skills of Spanish-speaking students of limited English proficiency (LEP) through bilingual instruction in science, mathematics, and the arts. It provided hands-on laboratory experiences for learning. The project operated at five elementary schools in the south Bronx: P.S. 1, P.S. 25, P.S. 29, C.S. 47, and C.S. 77.

STAFF

Title VII funded the project director and two educational assistants. Staff were bilingual in English and Spanish. The educational assistants spent one day a week in each of the five schools.

PARTICIPATING STUDENTS

Project MASTER students were all of Hispanic background. Most of them came from families with low incomes, as evidenced by their eligibility for the free lunch program. About 85 percent read below grade level, and approximately 50 percent lacked literacy skills in their native language.

II. IMPLEMENTATION

Site schools assigned students to bilingual classes on recommendation from teachers or on the basis of test scores at or below the 40th percentile on the Language Assessment Battery (LAB).

Project staff wanted to establish a partnership in which classroom teachers would present concepts and project staff (educational assistants) would provide activities, but the project was unable to implement this shared responsibility.

Project classes met once a week to work on science projects presented with an E.S.L. methodology. Topics included the solar system, energy, electricity, anatomy, robotics, and aviation. A guest photographer and an architect made presentations. It was hoped that the hands-on approach would encourage critical thinking.

Funding constraints limited the frequency of instruction. Lack of funds also prevented the hiring of a computer resource teacher, although the project obtained the use of three computers.

The project developed curriculum outlines which conformed to the state syllabus as well as lesson plans using E.S.L. techniques for each grade level.

III. OUTCOMES

INSTRUCTIONAL

English as a Second Language

- As a result of participating in the program, LEP children will make statistically significant gains in English language proficiency.

Project MASTER used the LAB for pretesting and posttesting. Matching data were available for 174 students. The data showed a mean gain of 4.2 Normal Curve Equivalents (N.C.E.s) (s.d.=14.3), and analysis indicated a significant ($p<.05$) improvement between pretest and posttest scores.

Project MASTER met its E.S.L. objective.

Mathematics

- As a result of participating in the program LEP children will show significant gains in mathematics achievement.

Matching data on the Metropolitan Achievement Test (MAT) in Mathematics were available for 239 students. The mean gain was 3.1 N.C.E.s (s.d.=15.0), and analysis indicated a significant ($p<.05$) improvement between pretest and posttest scores.

Project MASTER met its mathematics objective.

Science

- As a result of participating in the program for at least two years, the LEP children will have mastered a significant number of science concepts and skills on a program-developed criterion referenced measurement instrument.

On average, the students passed 81 percent of the tests they took. Sixty-five percent passed all their tests. Only three percent did not pass any tests.

Project MASTER met its science objective.

NONINSTRUCTIONAL

Staff Development

- All the educational assistants in the target schools will enroll in a program leading towards teacher certification as assessed by documentation of registration in a degree-granting program at a local university.

One of the educational assistants was about to obtain her degree this year. The other was taking courses at a local university. The project achieved its staff development objective.

Parental Involvement

- By the end of the final year of the project, it is expected that 50 percent of the parents of LEP students participating in the project will have attended parent conferences, seminars, or workshops as assessed by attendance records kept by the project.

Because of funding restrictions and staff shortages, the project could not offer parents the full range of workshops and services it had proposed. At P.S. 29, the project held a science workshop in which parents could experience their children's class activities. At the end of the year, the project held a meeting at which parents reviewed the project's achievements.

The project did not offer the data necessary for OREA to evaluate its parental involvement objective.

FOLLOW-UP OF PROGRAM PARTICIPANTS

Fifteen students left the program during the course of the year: four left the United States, four transferred to another school, and seven students left for unknown reasons. The project did not provide achievement data on former program participants.

IV. CONCLUSIONS

In its fifth and final year, financial constraints reduced the number and variety of activities which Project MASTER offered. The project staff had been unable to establish the contemplated partnership between classroom teachers and educational assistants in which the former would present concepts and the latter would provide activities. The project was successful in accomplishing all of its instructional objectives in E.S.L., mathematics, and science. It met its objective for staff development but did not supply the data for OREA to assess the objective for parental involvement.